FIG. 1

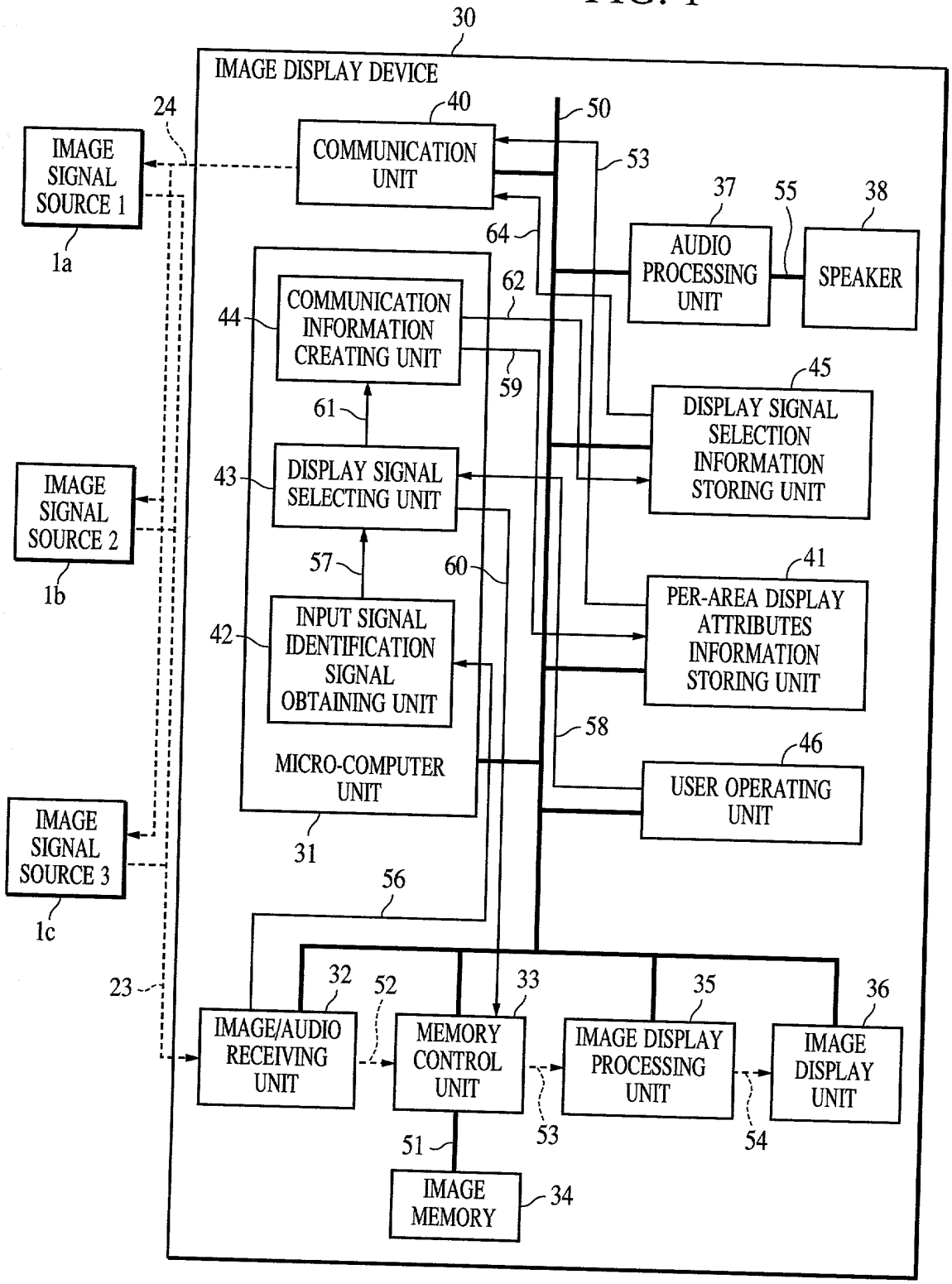

30
IMAGE DISPLAY DEVICE
24
40
50
IMAGE SIGNAL SOURCE 1
COMMUNICATION UNIT
53
1a
37
55
38
64
AUDIO PROCESSING UNIT
SPEAKER
62
44
COMMUNICATION INFORMATION CREATING UNIT
59
45
61
DISPLAY SIGNAL SELECTION INFORMATION STORING UNIT
IMAGE SIGNAL SOURCE 2
43
DISPLAY SIGNAL SELECTING UNIT
1b
57
60
41
PER-AREA DISPLAY ATTRIBUTES INFORMATION STORING UNIT
42
INPUT SIGNAL IDENTIFICATION SIGNAL OBTAINING UNIT
58
46
MICRO-COMPUTER UNIT
USER OPERATING UNIT
IMAGE SIGNAL SOURCE 3
31
56
1c
23
32
52
33
35
36
IMAGE/AUDIO RECEIVING UNIT
MEMORY CONTROL UNIT
IMAGE DISPLAY PROCESSING UNIT
IMAGE DISPLAY UNIT
53
54
51
IMAGE MEMORY
34

FIG. 2

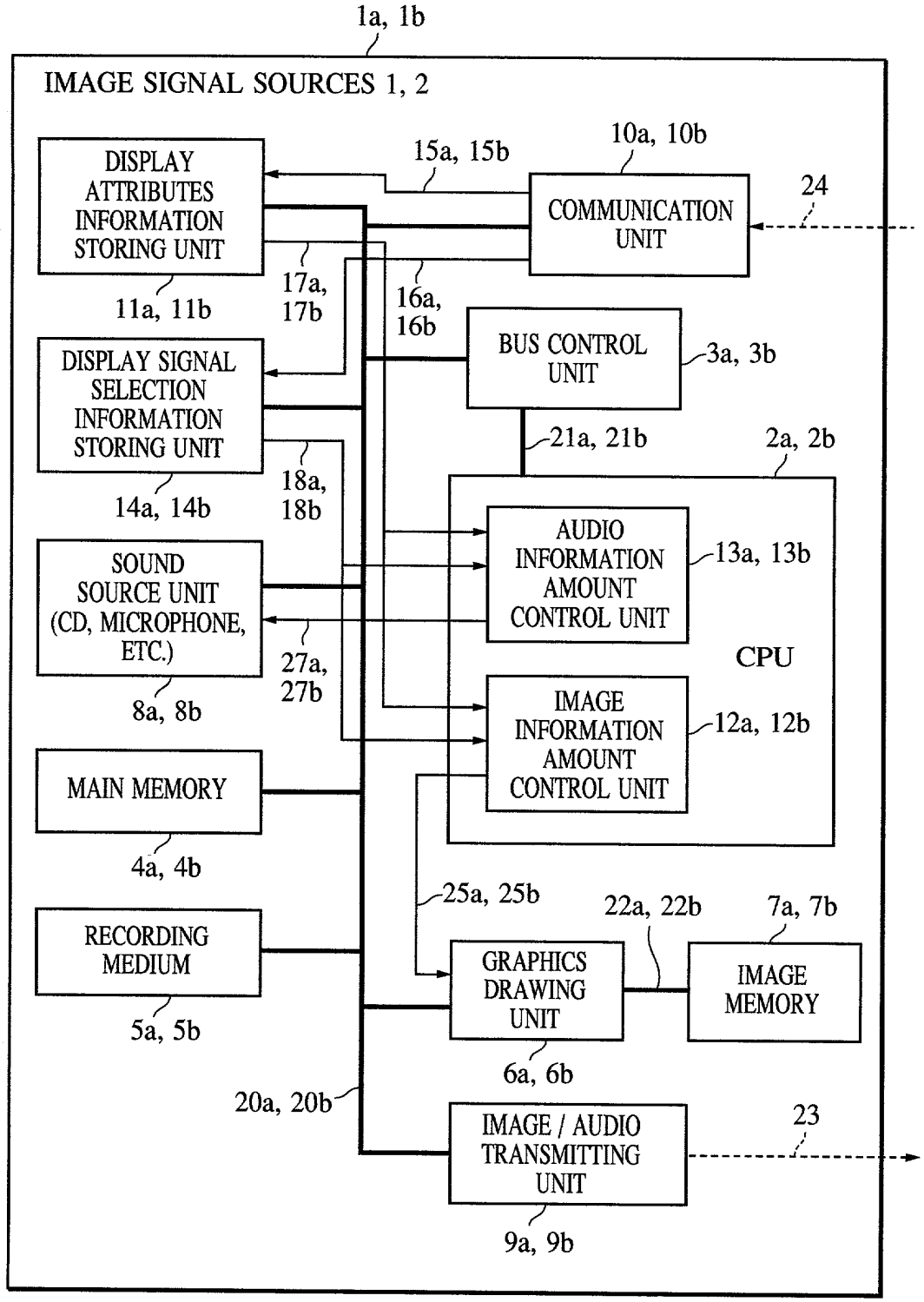

1a, 1b
IMAGE SIGNAL SOURCES 1, 2
DISPLAY ATTRIBUTES INFORMATION STORING UNIT
11a, 11b
15a, 15b
10a, 10b
COMMUNICATION UNIT
24
17a, 17b
16a, 16b
BUS CONTROL UNIT
3a, 3b
DISPLAY SIGNAL SELECTION INFORMATION STORING UNIT
14a, 14b
18a, 18b
21a, 21b
2a, 2b
AUDIO INFORMATION AMOUNT CONTROL UNIT
13a, 13b
SOUND SOURCE UNIT (CD, MICROPHONE, ETC.)
8a, 8b
27a, 27b
CPU
IMAGE INFORMATION AMOUNT CONTROL UNIT
12a, 12b
MAIN MEMORY
4a, 4b
25a, 25b
22a, 22b
7a, 7b
RECORDING MEDIUM
5a, 5b
GRAPHICS DRAWING UNIT
IMAGE MEMORY
6a, 6b
20a, 20b
IMAGE / AUDIO TRANSMITTING UNIT
23
9a, 9b

FIG. 3

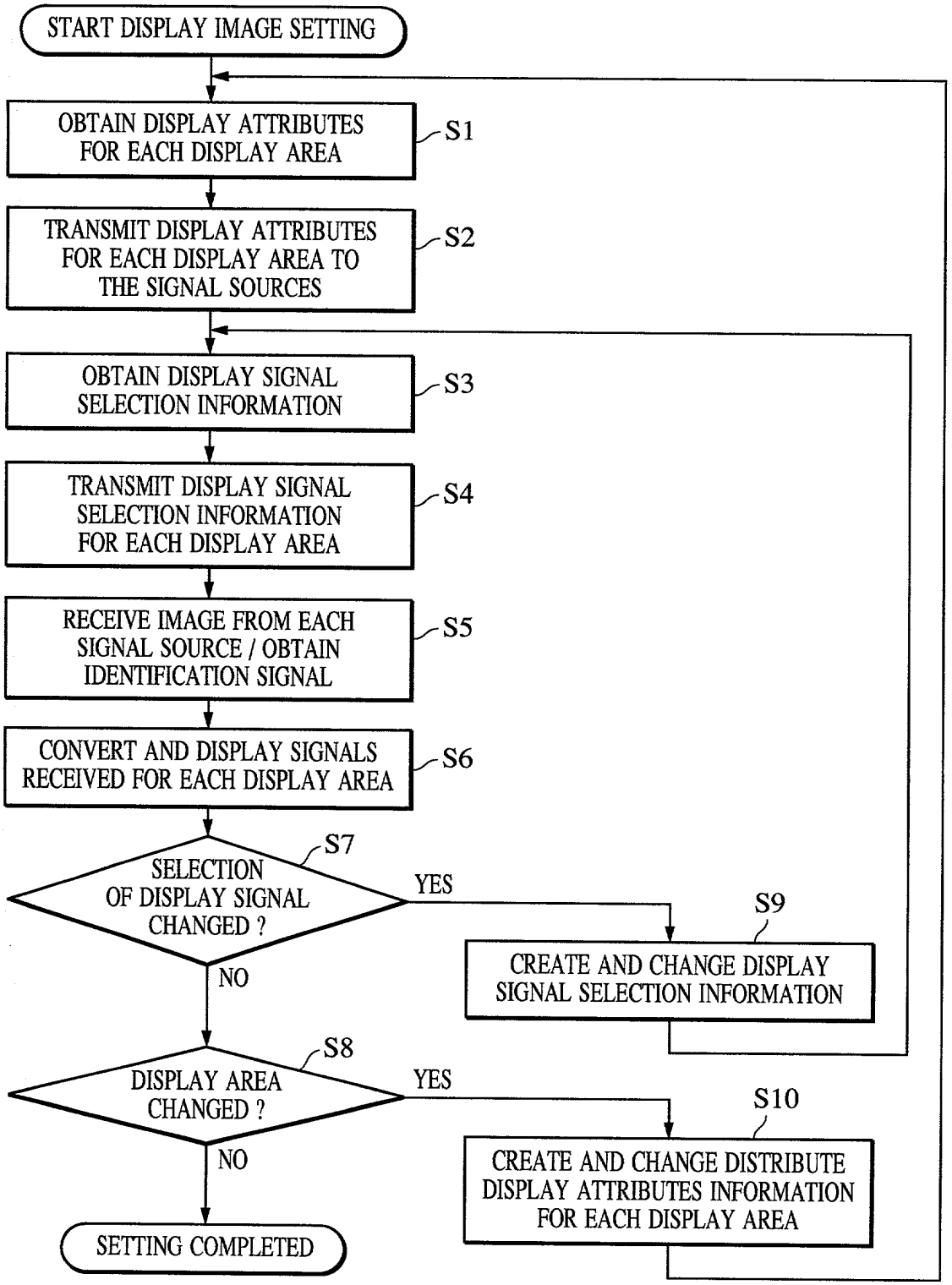

START DISPLAY IMAGE SETTING
OBTAIN DISPLAY ATTRIBUTES FOR EACH DISPLAY AREA
S1
TRANSMIT DISPLAY ATTRIBUTES FOR EACH DISPLAY AREA TO THE SIGNAL SOURCES
S2
OBTAIN DISPLAY SIGNAL SELECTION INFORMATION
S3
TRANSMIT DISPLAY SIGNAL SELECTION INFORMATION FOR EACH DISPLAY AREA
S4
RECEIVE IMAGE FROM EACH SIGNAL SOURCE / OBTAIN IDENTIFICATION SIGNAL
S5
CONVERT AND DISPLAY SIGNALS RECEIVED FOR EACH DISPLAY AREA
S6
SELECTION OF DISPLAY SIGNAL CHANGED ?
S7
YES
NO
CREATE AND CHANGE DISPLAY SIGNAL SELECTION INFORMATION
S9
DISPLAY AREA CHANGED ?
S8
YES
NO
CREATE AND CHANGE DISTRIBUTE DISPLAY ATTRIBUTES INFORMATION FOR EACH DISPLAY AREA
S10
SETTING COMPLETED

FIG. 4

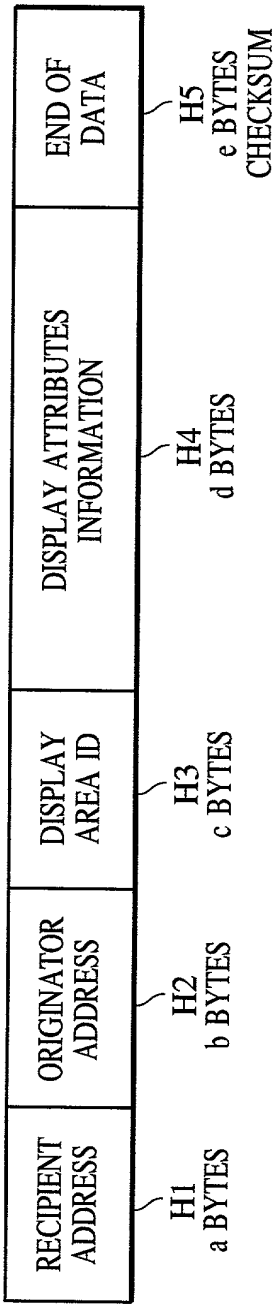

RECIPIENT ADDRESS
ORIGINATOR ADDRESS
DISPLAY AREA ID
DISPLAY ATTRIBUTES INFORMATION
END OF DATA
H1 a BYTES
H2 b BYTES
H3 c BYTES
H4 d BYTES
H5 e BYTES CHECKSUM

FIG. 5

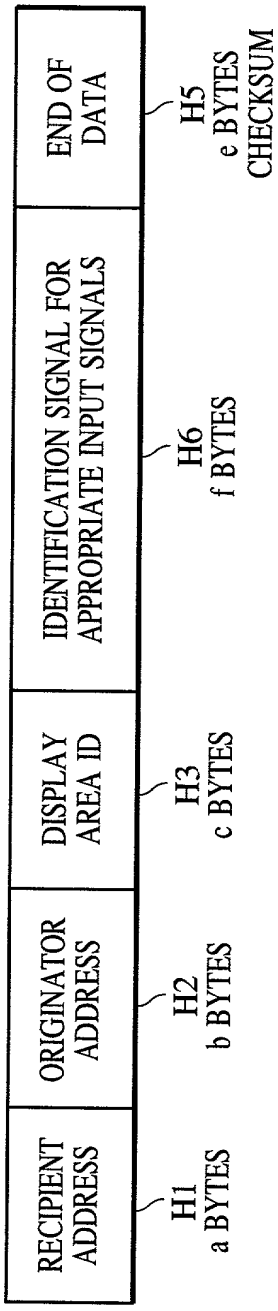
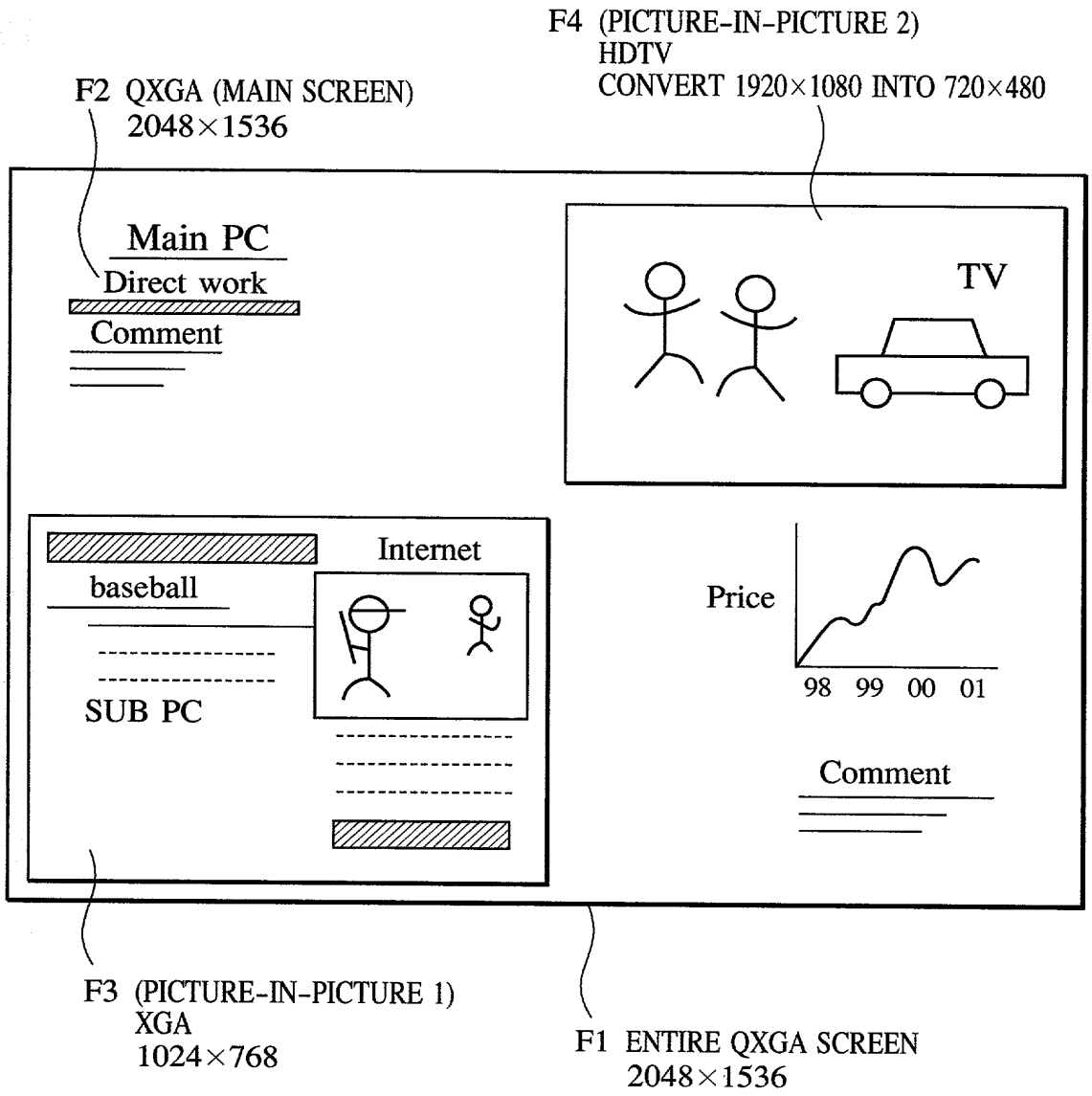

RECIPIENT ADDRESS
ORIGINATOR ADDRESS
DISPLAY AREA ID
IDENTIFICATION SIGNAL FOR APPROPRIATE INPUT SIGNALS
END OF DATA
H1 a BYTES
H2 b BYTES
H3 c BYTES
H6 f BYTES
H5 e BYTES CHECKSUM

FIG. 6

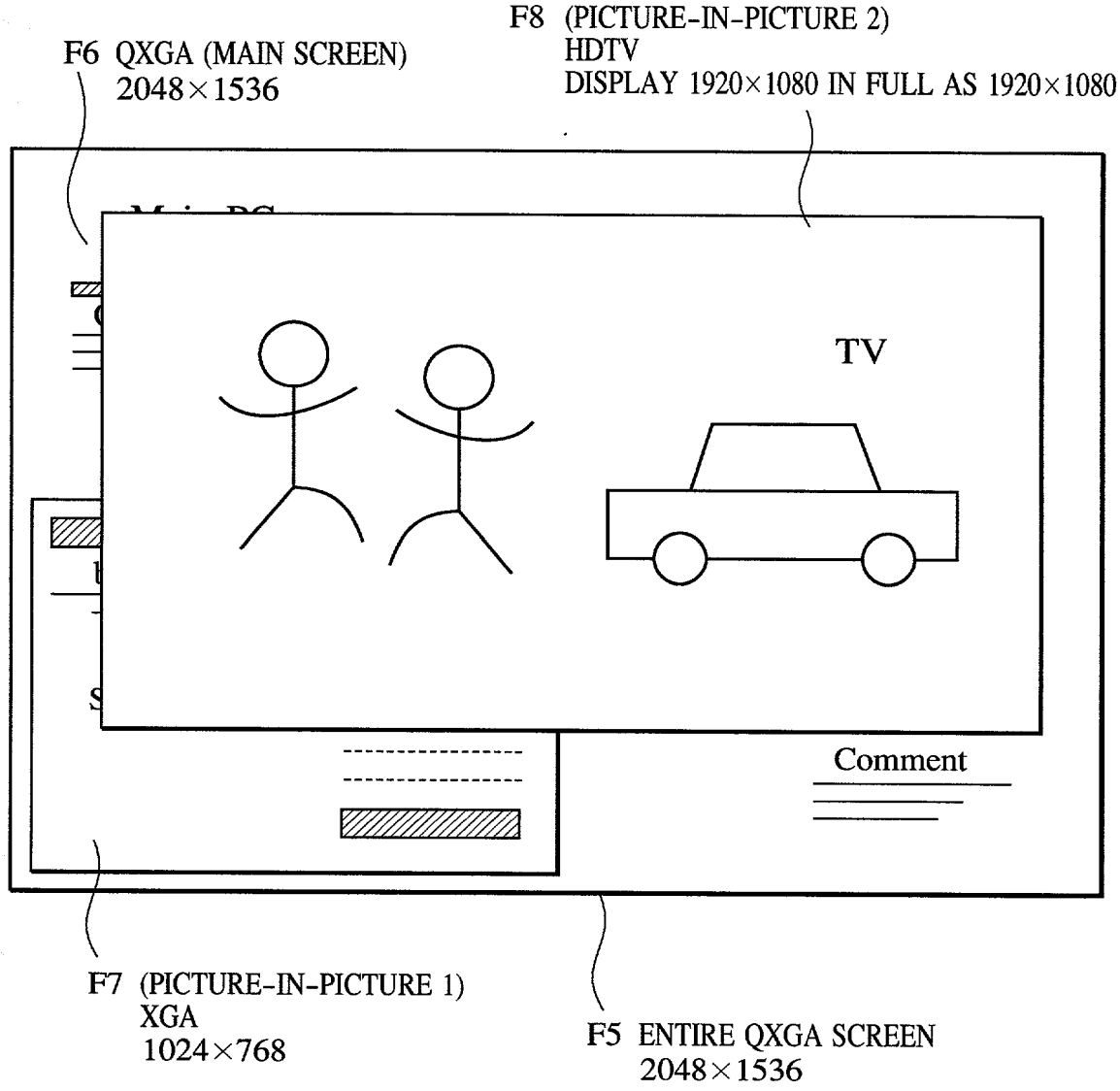

F4 (PICTURE-IN-PICTURE 2)
HDTV
CONVERT 1920×1080 INTO 720×480
F2 QXGA (MAIN SCREEN)
2048×1536
Main PC
Direct work
Comment
TV
Internet
baseball
SUB PC
Price
98 99 00 01
Comment
F3 (PICTURE-IN-PICTURE 1)
XGA
1024×768
F1 ENTIRE QXGA SCREEN
2048×1536

TOSO90 E62E7860

FIG. 7

DISPLAY AREA	F2	F3	F4
PER-AREA DISPLAY ATTRIBUTES	RESOLUTION : QXGA GRADIENTS : 8-BIT	RESOLUTION : XGA GRADIENTS : 8-BIT	RESOLUTION : SDTV GRADIENTS : 8-BIT
ATTRIBUTED SIGNAL SOURCE	PC1	PC2	DVD
INPUT IDENTIFICATION SIGNAL	COMMUNICATION ADDRESS FOR PC1	IDENTIFICATION ID OF OUTPUT SIGNAL OF PC2	COMMUNICATION ADDRESS FOR DVD

FIG. 8


F6 QXGA (MAIN SCREEN)
2048×1536
F8 (PICTURE-IN-PICTURE 2)
HDTV
DISPLAY 1920×1080 IN FULL AS 1920×1080
TV
Comment
F7 (PICTURE-IN-PICTURE 1)
XGA
1024×768
F5 ENTIRE QXGA SCREEN
2048×1536

T0S090 "E62E2860

FIG. 9

DISPLAY AREA	F2	F3	F4
PER-AREA DISPLAY ATTRIBUTES	RESOLUTION : QXGA GRADIENTS : 8-BIT	RESOLUTION : XGA GRADIENTS : 8-BIT	RESOLUTION : HDTV GRADIENTS : 8-BIT
ATTRIBUTED SIGNAL SOURCE	PC1	PC2	DVD
INPUT IDENTIFICATION SIGNAL	COMMUNICATION ADDRESS FOR PC1	IDENTIFICATION ID OF OUTPUT SIGNAL OF PC2	COMMUNICATION ADDRESS FOR DVD

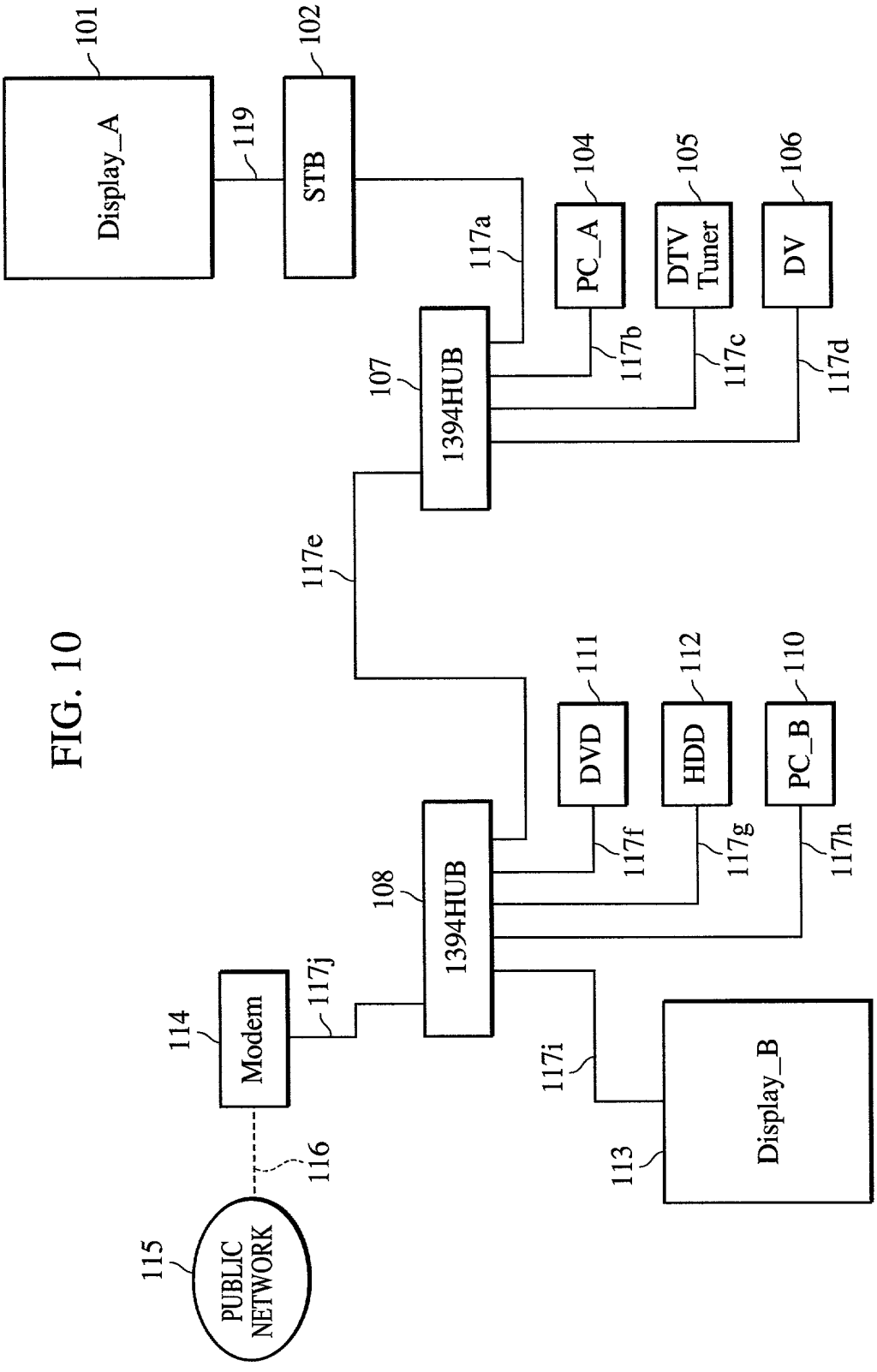

101
Display_A
119
102
STB
117a
104
PC_A
105
DTV Tuner
106
DV
107
1394HUB
117b
117c
117d
117e
111
DVD
112
HDD
110
PC_B
108
1394HUB
117f
117g
117h
114
Modem
117j
117i
113
Display_B
116
115
PUBLIC NETWORK

FIG. 10

FIG. 11

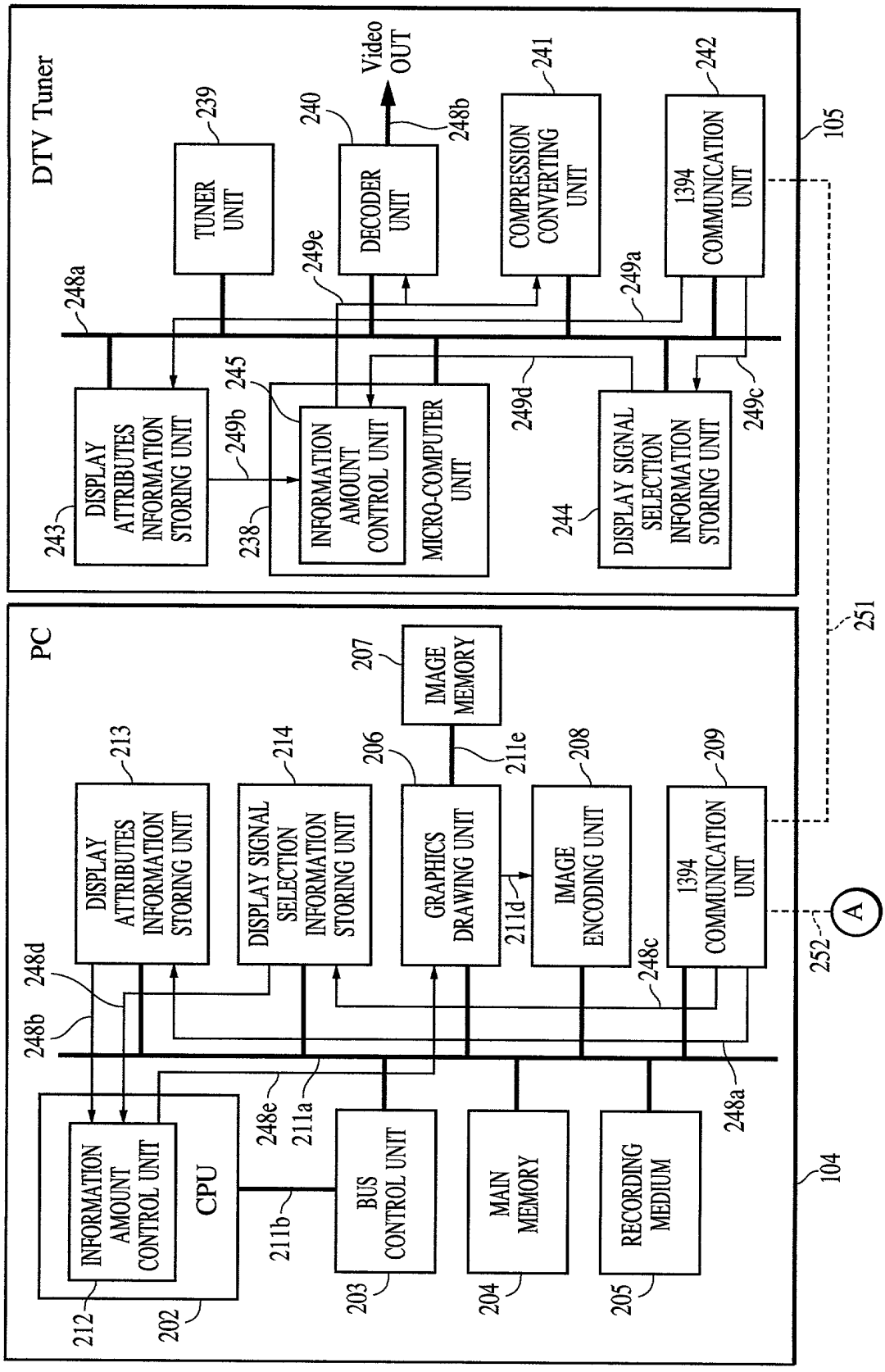

DTV Tuner
TUNER UNIT
239
DECODER UNIT
240
Video OUT
248b
COMPRESSION CONVERTING UNIT
241
1394 COMMUNICATION UNIT
242
105
248a
249e
249a
DISPLAY ATTRIBUTES INFORMATION STORING UNIT
243
249b
245
INFORMATION AMOUNT CONTROL UNIT
238
MICRO-COMPUTER UNIT
249d
DISPLAY SIGNAL SELECTION INFORMATION STORING UNIT
244
249c
PC
IMAGE MEMORY
207
DISPLAY ATTRIBUTES INFORMATION STORING UNIT
213
DISPLAY SIGNAL SELECTION INFORMATION STORING UNIT
214
GRAPHICS DRAWING UNIT
206
211e
IMAGE ENCODING UNIT
208
1394 COMMUNICATION UNIT
209
251
248d
248b
211d
248c
252
A
INFORMATION AMOUNT CONTROL UNIT
CPU
212
202
248e
211a
211b
BUS CONTROL UNIT
203
MAIN MEMORY
204
RECORDING MEDIUM
205
248a
104

FIG. 12

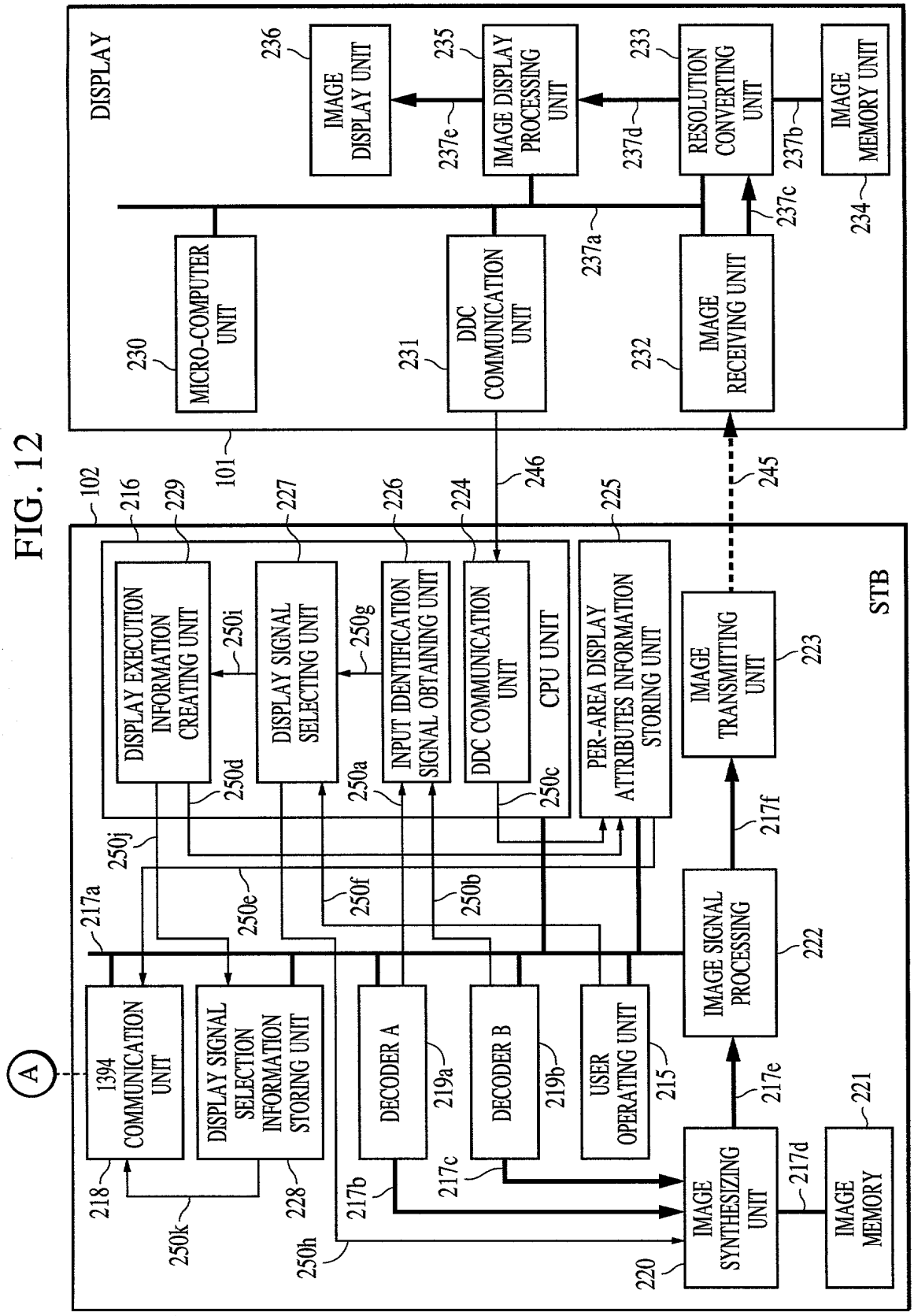
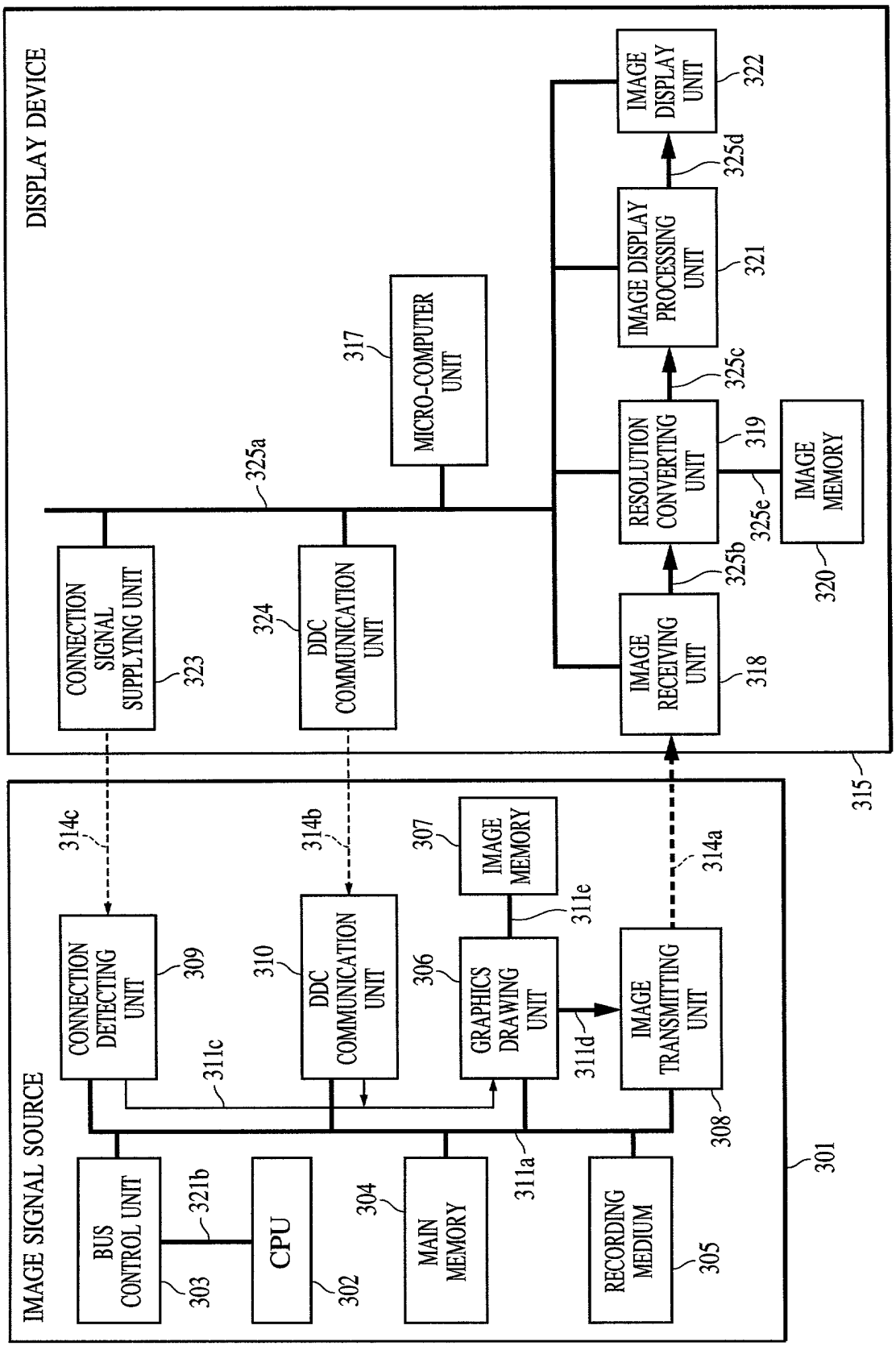

DISPLAY
236
IMAGE DISPLAY UNIT
235
IMAGE DISPLAY PROCESSING UNIT
233
RESOLUTION CONVERTING UNIT
IMAGE MEMORY UNIT
237e
237d
237b
237c
234
230
MICRO-COMPUTER UNIT
231
DDC COMMUNICATION UNIT
232
IMAGE RECEIVING UNIT
237a
101
246
245
102
216
229
227
226
224
225
STB
DISPLAY EXECUTION INFORMATION CREATING UNIT
250i
DISPLAY SIGNAL SELECTING UNIT
250g
INPUT IDENTIFICATION SIGNAL OBTAINING UNIT
DDC COMMUNICATION UNIT
CPU UNIT
PER-AREA DISPLAY ATTRIBUTES INFORMATION STORING UNIT
IMAGE TRANSMITTING UNIT
223
250d
250a
250c
250j
250e
250f
250b
217a
217f
A
1394 COMMUNICATION UNIT
DISPLAY SIGNAL SELECTION INFORMATION STORING UNIT
DECODER A
DECODER B
USER OPERATING UNIT
IMAGE SIGNAL PROCESSING
222
218
228
219a
219b
215
217e
250k
250h
217b
217c
220
IMAGE SYNTHESIZING UNIT
IMAGE MEMORY
221
217d

FIG. 13 (PRIOR ART)



"0030030" E32E/8E0

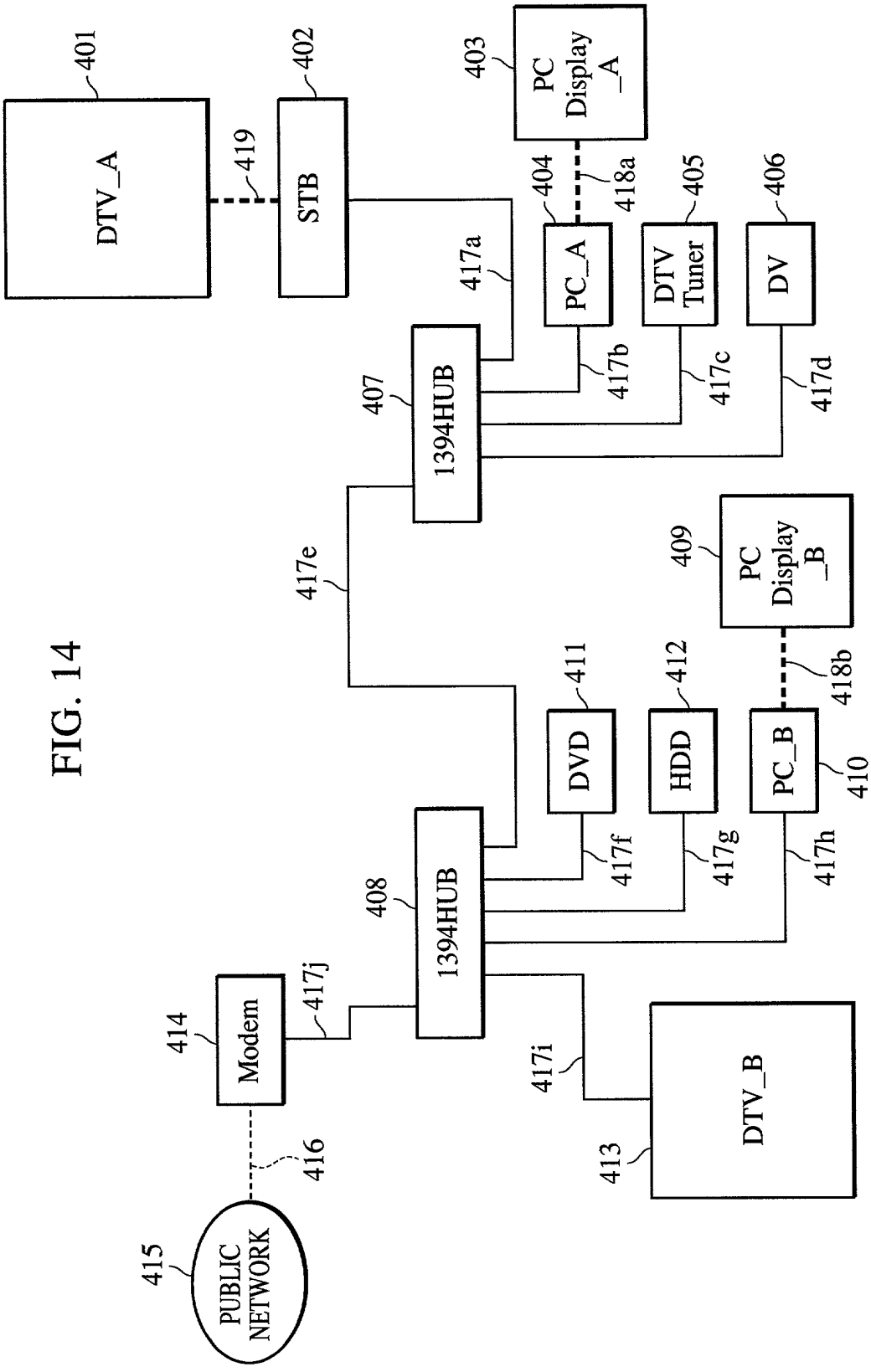



FIG. 14